

1 What is claimed is:

2
3 1. A pipe coupling for coupling adjacent ends of a pair of pipe sections where one of the pipe
4 sections is formed of a polyolefin and the other pipe section is formed of a different material, the
5 coupling comprising:

6
7 an adapter formed of a length of pipe having a polyolefin pipe wall, the adapter having a fusing end
8 for fusing to a successive length of polyolefin pipe and a coupling end;

9
10 wherein the coupling end of the adapter has a nominal thickness pipe wall with an integral flange
11 formed at one end thereof,

12
13 wherein the integral flange defines a bell end opening for the adapter, the bell end opening having a
14 first region of reduced internal diameter for receiving a sealing gasket therein, the bell end opening
15 also having a second region of further reduced internal diameter which forms a circumferential
16 shoulder region therein for receiving a male spigot end of a mating pipe which is formed of the
17 different material;

18
19 the adapter integral flange having a front face, a rear face and an outer peripheral surface, and
20 wherein a rigid reinforcing ring circumscribes the outer peripheral surface in order to strengthen the
21 connection when the spigot end of a mating male pipe is inserted within the bell end opening of the
22 adapter to form the pipe coupling.

23
24 2. The pipe coupling of claim 1, wherein the length of pipe having the polyolefin wall is formed of
25 polyethylene.

1 3. A pipe joint, comprising:

2
3 a first section of pipe having a polyolefin pipe wall and a second section of pipe of a different material;

4
5 an adapter formed of a length of pipe having a polyolefin pipe wall, the adapter having a fusing end
6 which is fused to the first section of pipe, the adapter also having a coupling end;

7
8 wherein the coupling end of the adapter is joined to the fusing end by a nominal thickness pipe wall
9 with an integral flange being formed on the coupling end thereof,

10
11 wherein the integral flange defines a bell end opening for the adapter, the bell end opening having a
12 first region of reduced internal diameter for receiving a sealing gasket therein, the bell end opening
13 also having a second region of further reduced internal diameter which forms a circumferential
14 shoulder region therein for receiving a male spigot end of a mating pipe which is formed of the
15 different material;

16
17 the adapter integral flange having a front face, a rear face and an outer peripheral surface, and
18 wherein a rigid reinforcing ring circumscribes the outer peripheral surface in order to strengthen the
19 connection when the spigot end of a mating male pipe is inserted within the bell end opening of the
20 adapter to form the pipe coupling;

21
22 a sealing gasket installed within the second region of reduced internal diameter of the integral flange;
23 and

24
25 a male spigot pipe end of the second section of pipe being inserted within the bell end opening and
26 engaging the circumferential shoulder region thereof to thereby form a sealed pipe joint.

27
28 4. The pipe joint of claim 3, wherein the length of pipe having the polyolefin wall is formed of
29 polyethylene.

1 5. The pipe joint of claim 3, wherein the length of pipe of a different material is formed of a material
2 selected from the group consisting of PVC, ductile iron, cast iron and steel.

3
4 6. The pipe joint of claim 3, further comprising a mechanical restraint system which engages an
5 external surface of the second section of pipe and the front face and rear face of the integral flange,
6 respectively, in order to prevent the second section of pipe from pulling away from the bell end
7 opening of the integral flange.

8
9 7. The pipe joint of claim 5, wherein the restraint system includes a pair of restraint rings which are
10 located on opposite sides of the integral flange of the pipe joint.

11
12 8. A method of coupling adjacent ends of a pair of pipe sections where one of the pipe sections is
13 formed of a polyolefin and the other pipe section is formed of a different material, the method
14 comprising the steps of:

15
16 providing an adapter formed of a length of pipe having a polyolefin pipe wall, the adapter having a
17 fusing end which is butt fused to a successive length of polyolefin pipe and a coupling end;

18
19 wherein the coupling end of the adapter is extruded with a pipe wall which is thicker than an ultimate
20 nominal thickness pipe wall, the coupling being subsequently machined to define a nominal thickness
21 pipe wall with an integral flange formed at one end thereof,

22
23 wherein the integral flange defines a bell end opening for the adapter, the bell end opening having a
24 first region of reduced internal diameter for receiving a sealing gasket therein, the bell end opening
25 also having a second region of further reduced internal diameter which forms a circumferential
26 shoulder region therein for receiving a male spigot end of a mating pipe which is formed of the
27 different material;

28
29 installing a sealing gasket within the bell end opening of the adapter;

1 the adapter integral flange being formed with a front face, a rear face and an outer peripheral surface,
2 and wherein a rigid reinforcing ring is located on and circumscribes the outer peripheral surface in
3 order to strengthen the connection when the spigot end of a mating male pipe is inserted within the
4 bell end opening of the adapter to form the pipe coupling;

5
6 installing a male spigot end of a second section of pipe formed of a different material into the bell end
7 opening until the male spigot end contacts the internal shoulder of the integral flange and forms a seal
8 with the internal sealing gasket.

9
10 9. The method of claim 8, wherein the length of pipe having the polyolefin wall is formed of
11 polyethylene.

12
13 10. The method of claim 8, wherein the length of pipe of a different material is formed of a material
14 selected from the group consisting of PVC, ductile iron, cast iron and steel.

15
16 11. The method of claim 8, wherein a mechanical restraint system engages an external surface of the
17 second section of pipe and the front face and rear face of the integral flange, respectively, in order
18 to prevent the second section of pipe from pulling away from the bell end opening of the integral
19 flange.

20
21 12. The method of claim 9, wherein the restraint system includes a pair of restraint rings which are
22 located on opposite sides of the integral flange of the pipe joint.